Source: Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Reissue Patents (i)

Terms: 38049 (Edit Search)

✓ Select for FOCUS™ or Delivery

V

759058 (08) RE 38049 March 25, 2003

# UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT RE 38049

♦ Get Drawing Sheet 1 of 5
Access PDF of Official Patent. (Note: Cost incurred in a later step)

The Adobe Acrobat Reader must be installed on your computer to access Official Patent text. If you do not have this FREE reader, you can download it now from <a href="https://www.adobe.com">www.adobe.com</a>.

#### Link to Claims Section

March 25, 2003

Optimized container stacked capacitor dram cell utilizing sacrificial oxide deposition and chemical mechanical polishing

INVENTOR: Dennison, Charles H. - Meridian, Idaho; Walker, Michael A. - Boise, Idaho

APPL-NO: 759058 (08)

FILED-DATE: October 7, 1996

GRANTED-DATE: March 25, 2003

ASSIGNEE-AT-ISSUE: Micron Technology, Inc., Boise, Idaho, 02

LEGAL-REP: Traskbritt

PUB-TYPE: March 25, 2003 - Reissue Patent (E1)

**PUB-COUNTRY:** United States (US)

REL-DATA:

Continuation of Ser. No. 07/850746, March 13, 1992, GRANTED PATENT 5162248, Utility Patent having no previously published pre-grant publication (A)

Reissue of: 07/973092, November 6, 1992, PENDING 05270241, December 14, 1993

US-MAIN-CL: 438#396

US-ADDL-CL: 438#253, 438#238, 438#692, 438#633, 216#6

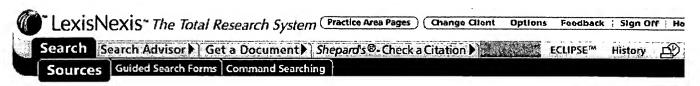
CL: 438, 216

SEARCH-FLD: 148#DIG014, 438#396, 438#397, 438#398, 438#253, 438#254, 438#255,

438#238, 438#692, 438#633, 216#633, 216#6

IPC-MAIN-CL: 7H 01L021#20

PRIM-EXMR: Nguyen, Tuan H.



<u>Legal</u> > <u>Area of Law - By Topic</u> > <u>Patent Law</u> > <u>Patents</u> > <u>U.S. Patents</u> > <u>Reissue Patents</u> (i)

Enter Search Terms	
Terms and Connectors Natural Language	
38049	Search
Use connectors to show relation of terms (cat/or feline, jane w/3 doe) more	
Suggest Words and Concepts for Entered Terms	
Restrict Search Using Document Segments	A STATE OF THE STA
Optional: Restrict by Date	
No Date: Restrictions ▼ O From To	

Search | Search Advisor | Get a Document | Shepard's ® - Check a Citation

| History | Delivery Manager | Practice Area Pages | Change Client | Options | Feedback | Signoff | Help
| About LexisNexis | Terms and Conditions

Source: Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility Patents (i)

Terms: patno=5162248 (Edit Search)

#### 850746 (07) 5162248 November 10, 1992

# UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT 5162248

# ♦ GET 1st DRAWING SHEET OF 4 Access PDF of Official Patent. (Note: Cost incurred in a later step)

The Adobe Acrobat Reader must be installed on your computer to access Official Patent text. If you do not have this FREE reader, you can download it now from <a href="www.adobe.com">www.adobe.com</a>.

#### **Link to Claims Section**

November 10, 1992

Optimized container stacked capacitor DRAM cell utilizing sacrificial oxide deposition and chemical mechanical polishing

**REISSUE:** Reissue Application filed Oct. 7, 1996 (O.G. Feb. 4, 1997) Ex. Gp. 1104; Re. S.N. 08/759,058, (O.G. February 4, 1997)

INVENTOR: Dennison, Charles H., Boise, ID; Walker, Michael A., Boise, ID

APPL-NO: 850746 (07)

FILED-DATE: March 13, 1992

GRANTED-DATE: November 10, 1992

ASSIGNEE-AT-ISSUE: Micron Technology, Inc., Boise, ID

ASSIGNEE-AFTER-ISSUE: March 13, 1992 - ASSIGNMENT OF ASSIGNORS INTEREST., MICRON TECHNOLOGY, INC. A CORP. OF DELAWA RE 2805 E. COLUMBIA ROAD BOISE IDAHO

83706, Reel and Frame Number: 006079/0156

LEGAL-REP: Paul, David J.

PUB-TYPE: November 10, 1992 - Utility Patent having no previously published pre-grant

publication (A)

PUB-COUNTRY: United States (US)

US-MAIN-CL: 438#396

**CL:** 438

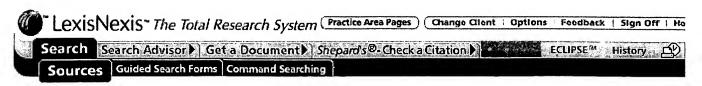
SEARCH-FLD: 437#47, 437#48, 437#52, 437#60, 437#228, 437#235, 437#919,

437#985, 357#236, 365#149

IPC-MAIN-CL: H 01L021#70

PRIM-EXMR: Thomas, Tom

REF-CITED:



Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility Patents (1)

Enter Search Terms	
Terms and Connectors	
patno=5162248	Search Search
Use connectors to show relation of terms (cat or feline, jane w/3 doe) mor	
Suggest Words and Concepts for Entered Terms	
Restrict Search Using Document Segments	
Optional: Restrict by Date	
No Date Restrictions ▼ O From	То

Search | Search Advisor | Get a Document | Shepard's ® - Check a Citation | Eclipse ™ | History | Delivery Manager | Practice Area Pages | Change Client | Options | Feedback | Signoff | Help About LexisNexis | Terms and Conditions

Source: Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility Patents (i)

Terms: patno=5270241 (Edit Search)

#### 973092 (07) 5270241 December 14, 1993

# UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT 5270241

# ♦ GET 1st DRAWING SHEET OF 4 Access PDF of Official Patent. (Note: Cost incurred in a later step)

The Adobe Acrobat Reader must be installed on your computer to access Official Patent text. If you do not have this FREE reader, you can download it now from <a href="https://www.adobe.com">www.adobe.com</a>.

### Link to Claims Section

#### December 14, 1993

Optimized container stacked capacitor DRAM cell utilizing sacrificial oxide deposition and chemical mechanical polishing

**REISSUE:** Reissue Application filed Dec. 12, 2001 (O.G. Apr. 9, 2002) Ex. Gp.: 1634; Re. S.N. 10/020,741, (O.G. April 9, 2002)

5.N. 10/020,741, (O.G. April 9, 2002)

March 25, 2003 - This Patent was reissued as Reissue Patent RE 38,049 (O.G. March 25, 2003)

INVENTOR: Dennison, Charles H., Boise, ID; Walker, Michael A., Boise, ID

APPL-NO: 973092 (07)

FILED-DATE: November 6, 1992

GRANTED-DATE: December 14, 1993

ASSIGNEE-AT-ISSUE: Micron Technology, Inc., Boise, ID

LEGAL-REP: Paul, David J.

PUB-TYPE: December 14, 1993 - Utility Patent having no previously published pre-grant

publication (A)

PUB-COUNTRY: United States (US)

REL-DATA:

Addition of Ser. No. 5162248

Addition of Ser. No. 850746, March 13, 1992

US-MAIN-CL: 438#396

US-ADDL-CL: 216#6, 438#633, 438#692

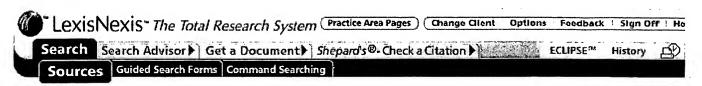
CL: 438, 216, 438

SEARCH-FLD: 437#47, 437#48, 437#52, 437#60, 437#225, 437#228, 437#235,

437#919, 437#986, 257#306

IPC-MAIN-CL: H 01L021#70

.[



<u>Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility Patents</u> (1)

Enter Search Terms	
Terms and Connectors	
patno=5270241	Search Search
Use connectors to show relation of terms (cat or feline, jane w/3 doe) m	<u>10re</u>
Suggest Words and Concepts for Entered Terms	e various services of the ser
Restrict Search Using Document Segments	
Optional: Restrict by Date	
No Date Restrictions ▼ ○ From	To
1 × × × × × × × × × × × × × × × × × × ×	7 1 19 18 18 18 1 1 1 1 1 1 1 1 1 1 1 1 1

Search | Search Advisor | Get a Document | Shepard's ® - Check a Citation

Eclipse 
| History | Delivery Manager | Practice Area Pages | Change Client | Options | Feedback | Signoff | Help

About LexisNexis | Terms and Conditions

Query/Command : file pluspat

Query/Command: re38049/pn

\*\* SS 1: Results 1

Search statement 2

Query/Command: prt fu legalall max

1 / 1 PLUSPAT - , QUESTEL-ORBIT

PN - USRE38049 El 20030325 [USRE38049]

TI - (E1) Optimized container stacked capacitor dram cell utilizing sacrificial oxide deposition a mechanical polishing

PA - (E1) MICRON TECHNOLOGY INC (US)

PAO - Micron Technology, Inc., Boise ID [US]

IN - (E1) DENNISON CHARLES H (US); WALKER MICHAEL A (US)

AP - US75905896 19961007 [1996US-0759058]

FD - Reissue of: US5270241 - 19931214

Continuation of: US5162248

PR - US75905896 19961007 [1996US-0759058] US97309292 19921106 [1992US-0973092] US85074692 19920313 [1992US-08507461

(E 1) HOIL-021/20

EC - HOIL-021/02B)C2V2

IC

PCL - ORIGINAL, (O): 438396000; CROSS-REFERENCE (X): 438253000 438238000 438692 216006000

DT - Corresponding document

CT - US4432799; US4671851; US4785337; US4877750; US4944836; US5045899; US5150276 US5185282; US5313089; US5364809; JP0286270; JP0094554; JP0074752 "Stacked Capacitor DRAM Cell with Vertical Fins", IBM TDB, Jul. 1990, pp. 245-247.\*

"Crown-Shaped Stacked-Capacitor Cell for 1.5-V Operation 64-Mb Dram's" by T. Kaga et Transactions on Electron Devices, vol. 38, No. 2, Feb. 1991, pp. 255-261.\*

"A Stacked Capacitor Cell with Ring Structure" by N. Shinmura et al., pp. 833-836. (Exten 22nd International Conference on Solid State Devices 1990).

STG - (E1) Reissue Patent

- An existing stacked capacitor fabrication process is modified to construct a three-dimension container capacitor. The present invention develops the container capacitor by etching an o opening) into a low etch rate oxide. The contact opening is used as a form for deposited po conforms to the sides of the opening walls. Within the thin poly lining of the oxide contain oxide, such as ozone TEOS, is deposited over the entire structure thereby bridging across th container. The high etch-rate oxide is planarized back to the thin poly and the resulting exp removed to separate neighboring containers. The two oxides, having different etch rates, ar thereby leaving a free-standing poly container cell with 100°/0 (or all) of the higher etch rate and a pre-determined oxide surrounding the container still intact.

UP - 2003-14

Query/Command: file inpadoc

Query/Command : fam us5270241/pn

1 Patent Groups

\*\* SS 7: Results 6

Search statement 8

### Query/Command: famstate nonstop

1/6 INPADOC - COINPADOC

PN - DE 4307725 C2 20020814 [DE43077251

TI - VERFAHREN ZUR HERSTELLUNG EINER STAPELKONDENSATOR-DRAM-ZELLE

IN - DENNISON CHARLES H [US]; WALKER MICHAEL A [US]

PA - MICRON TECHNOLOGY INC [US]

AP - DE 4307725/93-A 19930311 [1993DE-4307725]

PR - US 850746/92-A 19920313 [1992US-0850746]

IC - HO 1 L-021 /8242

1/1 LEGALI - ©LEGSTAT

PN - DE 4307725 [DE4307725]

**AP** - DE 4307725/93 19930311 [1993DE-4307725]

DT - DE-P

**ACTE** - 19930311 DE/AE-A

DOMESTIC APPLICATION (PATENT APPLICATION)

DE 4307725/93 19930311 [1993DE-4307725]

19930916 DE/A1 [+]

LAYING OPEN FOR PUBLIC INSPECTION

19990512 DE/8110 [+]

REQUEST FOR EXAMINATION PARAGRAPH 44

20020814 DE/D2 [+]

GRANT AFTER EXAMINATION

20030213 DE/8364 [+]

NO OPPOSITION DURING TERM OF OPPOSITION

**UP** - 2003-07

#### 2/6 INPADOC - ©INPADOC

PN - DE 4307725 A1 19930916 [DE4307725]

TI - VERFAHREN ZUR HERSTELLUNG EINER STAPELKONDENSATOR-DRAM-ZELLE

IN - DENNISON CHARLES H [US]; WALKER MICHAEL A [US]

PA - MICRON TECHNOLOGY INC [US]

**AP** - DE 4307725/93-A 19930311 [1993DE-4307725]

PR - US 850746/92-A 19920313 [1992US-0850746]

IC - H01L-027/108; H01L-021/72

1/1 LEGALI - ©LEGSTAT

PN - DE 4307725 [DE4307725]

**AP** - DE 4307725/93 19930311 [1993DE-4307725]

**DT** - DE-P

**ACTE -** 19930311 DE/AE-A

DOMESTIC APPLICATION (PATENT APPLICATION)

DE 4307725/93 19930311 [1993DE-4307725]

19930916 DE/A1 [+]

LAYING OPEN FOR PUBLIC INSPECTION

19990512 DE/8110 [+]

**REQUEST FOR EXAMINATION PARAGRAPH 44** 

20020814 DE/D2 [+]

GRANT AFTER EXAMINATION

20030213 DE/8364 [+]

NO OPPOSITION DURING TERM OF OPPOSITION

**UP** - 2003-07

#### 3/6 INPADOC - ©INPADOC

PN - JP 6013570 A2 19940121 [JP06013570]

TI - OPTIMUM-STACK TYPE CAPACITOR DRAM CELL UTILIZING VAPOR DEPOSITI

SACRIFICE OXIDE FILM AND CHEMICAL/ MECHANICAL POLISHING

IN - CHIYAARUZU EICHI DENISON; MAIKERU EI UOOKAA

PA - MICRON TECHNOLOGY INC

**AP** - JP 78582/93-A 19930315 [1993JP-0078582]

PR - US 850746/92-A 19920313 [1992US-0850746]

IC - H01L-027/108; H01L-027/04

#### 4/6 INPADOC - ©INPADOC

PN - JP 2826036 B2 19981118 [JP2826036]

IN - CHAARUZU EICHI DENISON; MAIKERU EI UOOKAA

PA - MICRON TECHNOLOGY INC

**AP** - JP 78582/93-A 19930315 [1993JP-0078582]

PR - US 850746/92-A 19920313 [1992US-0850746]

IC - H01L-027/108; H01L-021/822; H01L-021/8242; H01L-027/04

5/6 INPADOC - ©INPADOC

PN US 5162248 A 19921110 [US5162248]

TI OPTIMIZED CONTAINER STACKED CAPACITOR DRAM CELL UTILIZING SACR

DEPOSITION AND CHEMICAL MECHANICAL POLISHING

IN DENNISON CHARLES H [US]; WALKER MICHAEL A [US]

PA MICRON TECHNOLOGY INC [US]

AP US 850746/92-A 19920313 [1992US-0850746]

PR US 850746/92-A 19920313 [1992US-0850746]

IC H01L-021/70

#### 1/1 LEGALI - ©LEGSTAT

PN US 5162248 [US5162248]

AP US 850746/92 19920313 [1992US-0850746]

DT US-P

ACTE -19920313 US/AE-A

APPLICATION DATA (PATENT)

US 850746/92 19920313 [1992US-0850746]

19920313 US/AS02

ASSIGNMENT OF ASSIGNOR'S INTEREST

MICRON TECHNOLOGY, INC. A CORP. OF DELAWARE 2805 E. COLUMBIA ROA

8 \* DENNISON, CHARLES H.: 19920313; WALKER, MICHAEL A.: 19920313

19921110 US/A

**PATENT** 

19970204 US/RF

REISSUE APPLICATION FILED

961007

**UP** 1999-13

#### 6/6 INPADOC - ©INPADOC

PN US 5270241 A 19931214 [US5270241]

TI OPTIMIZED CONTAINER STACKED CAPACITOR DRAM CELL UTILIZING SACR DEPOSITION AND CHEMICAL MECHANICAL POLISHING

IN DENNISON CHARLES H [US]; WALKER MICHAEL A [US]

PA MICRON TECHNOLOGY INC [US]

AP US 973092/92-A 19921106 [1992US-0973092]

PR US 850746/92-A1 19920313 [1992US-0850746]

IC H01L-021/70 1/1 LEGALI - ©LEGSTAT

PN - US 5270241 [US5270241]

AP - US 973092/92 19921106 [1992US-0973092]

DT - US-P

**ACTE - 19921106 US/AE-A** 

APPLICATION DATA (PATENT)

US 973092/92 19921106 [1992US-0973092]

19931214 US/A

**PATENT** 

20020409 US/RF

REISSUE APPLICATION FILED

20011212

**UP** - 2002-17

## WELCOME TO QUESTEL.ORBIT – Your guide to INTELLECTUAL PROPERTY

Query/Command : file pluspat

Selected file: pluspat

Query/Command: us5270241/pn

#### \*\* SS 2: Results 1

Search statement 3

#### Query/Command: prt fu legalall max

1/1 PLUSPAT - ©QUESTEL-ORBIT - image

PN US5270241 A 19931214 [US5270241]

TI (A) Optimized container stacked capacitor DRAM cell utilizing sacrificial oxide deposition mechanical polishing

(A) MICRON TECHNOLOGY INC (US) PA

PAU Micron Technology, Inc., Boise ID [US]

(A) DENNISON CHARLES H (US); WALKER MICHAEL A (US) IN

AP US97309292 19921106 [1992US-0973092]

FD Cont. of US850746 19920313 [1992US-0850746]

Continuation of: US5162248

US97309292 19921106 [1992US-0973092] PR US85074692 19920313 [1992US-0850746]

IC (A) H01L-021/70

EC H01L-021/02B3C2D H01L-021/02B3C2V2

PCL ORIGINAL (O): 438396000; CROSS-REFERENCE (X): 216006000 257E21014 257E21

438692000

DT Corresponding document

US4671851; US4944836; US5045899; JP0286270; JP0074752; JP0094554 CT "Stacked Capacitor DRAM Cell with Vertical Fins" IBM TDB, Jul. 1990, pp. 245-247.

> "Crown-Shaped Stacked-Capacitor Cell for 1.5-V Operation 64-Mb Dram's" by T. Kaga et Transactions on Electron Devices, vol. 38, No. 2, Feb. 1991, pp. 255-261.

> "A Stacked Capacitor Cell with Ring Structure" by N. Shinmura et al., pp. 833-836. (Exten the 22rd International Conference on Solid State Devices, 1990).

STG (A) United States patent

AB An existing stacked capacitor fabrication process is modified to construct a three-dimension container capacitor. The present invention develops the container capacitor by etching an o opening) into a low etch rate oxide. The contact opening is used as a form for deposited po conforms to the sides of the opening walls. Within the thin poly lining of the oxide contain oxide, such as ozone TEOS, is deposited over the entire structure thereby bridging across th container. The high etch-rate oxide is planarized back to the thin poly and the resulting exp removed to separate neighboring containers. The two oxides, having different etch rates, ar thereby leaving a free-standing poly container cell with 100% (or all) of the higher etch rate and a pre-determined oxide surrounding the container still intact.

1/1 LGST - ©LEGSTAT

PN - US 5270241 [US5270241]

**AP** - US 973092/92 19921106 [1992US-0973092]

DT - US-P

ACT - 19921106 US/AE-A

APPLICATION DATA (PATENT)

US 973092/92 19921106 [1992US-0973092]

19931214 US/A

**PATENT** 

20020409 US/RF

REISSUE APPLICATION FILED

20011212

**UP** - 2002-17

1/1 CRXX - ©CLAIMS/RRX

**AN** - 2426555

**PN** - 5,270,241 A 19931214 [US5270241]

PA - Micron Technology Inc

PT - C (Chemical)

ACT - 20011212 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20020409

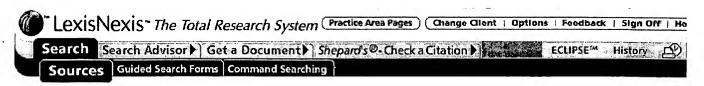
REISSUE REQUEST NUMBER: 10/020741

**EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 1634** 

Reissue Patent Number:

**UP** - 2002-15

**UACT** - 2002-04-09



<u>Legal > Area of Law - By Topic > Patent Law > Legal News > Patent, Trademark & Copyright Periodicals, Combined (i)</u>

<b>Enter Search Terms</b>							
Terms and Connectors O	latural Language						1473 1473 1474
5270241 or 5,270;	241			∆ S	earch		
Use connectors to show relation. Suggest vivords and							
Restrict Search Using	j Document Se	egments ·		x : 3		or a sur, is or element a se or high a se	
Optional: Restrict by Date	A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
No Date Restrictions	▼O From	n 🔛 💮	To				ya sa

Search | Search Advisor | Get a Document | Shepard's ® - Check a Citation

Eclipse 
| History | Delivery Manager | Practice Area Pages | Change Client | Options | Feedback | Signoff | Help

About LexisNexis | Terms and Conditions

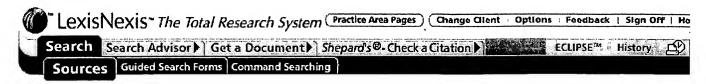
### **No Documents Found!**

No documents were found for your search (**5270241 or 5,270,241**). Please edit your search and try again. You may want to try one or more of the following:

- Check for spelling errors.Remove some search terms.Use more common search terms.
- · If applicable, look for all dates.



About LexisNexis | Terms and Conditions



 $\underline{\text{Legal} > \text{Area of Law - By Topic} > \underline{\text{Patent Law}} > \underline{\text{Multi-Source Groups}} > \underline{\text{Patent Cases from Federal Courts and Administrative Materials }}$ 

Enter Search Terms	
Terms and Connectors Natural Language	and the second control of the second control
5270241 or 5,270,241	Search S
Use connectors to show relation of terms (cat or feline, jane w/3 doe) more Suggest Words and Concepts for Entered Terms	re
Restrict Search Using Document Segments  Optional: Restrict by Date	
No Date Restrictions V O From	То

Search | Search Advisor | Get a Document | Shepard's ® - Check a Citation

Eclipse ™ | History | Delivery Manager | Practice Area Pages | Change Client | Options | Feedback | Signoff | Help

About LexisNexis | Terms and Conditions

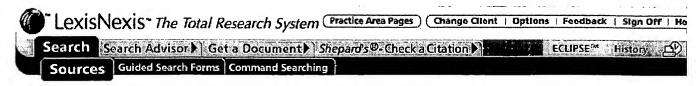
### No Documents Found!

No documents were found for your search (**5270241 or 5,270,241**). Please edit your search and try again. You may want to try one or more of the following:

- Check for spelling errors.
  Remove some search terms.
  Use more common search terms.
- · If applicable, look for all dates.

Edit Search

About LexisNexis | Terms and Conditions



News & Business > News > News Group File, All (i)

Enter Search Terms	
Terms and Connectors Natural Language	
5270241 or 5,270,241	Search
Use connectors to show relation of terms (cat or feline; jane w/3 doe) more	
Suggest Words and Concepts for Entered Terms	
Restrict Search Using Document Segments	
Optional: Restrict by Date	
No Date Restrictions     From     To	

Search | Search Advisor | Get a Document | Shepard's ® - Check a Citation | Eclipse ™ | History | Delivery Manager | Practice Area Pages | Change Client | Options | Feedback | Signoff | Help About LexisNexis | Terms and Conditions

### No Documents Found!

No documents were found for your search (5270241 or 5,270,241). Please edit your search and try again. You may want to try one or more of the following:

- Check for spelling errors.Remove some search terms.Use more common search terms.
- · If applicable, look for all dates.



About LexisNexis | Terms and Conditions

 $\underline{\text{Copyright}\, \textcircled{0}} \ \ \text{2003 LexisNexis, a division of Reed Elsevier Inc. All rights reserved}.$